LeCours, Catherine

From: Goldade.Mary@epamail.epa.gov
Sent: Tuesday, January 30, 2007 7:08 AM
To: Mary Goldade
Cc: miller.aubrey@epa.gov; LeCours, Catherine; costanzi.frances@epa.gov; luey.jim@epa.gov; peronard.paul@epa.gov; hoogerheide.roger@epa.gov; obrien.wendy@epa.gov
Subject: Re: TAPE comments

Follow Up Flag: Follow up
Flag Status: Blue

Attachments: QA-QC TAPE (MG 1-26-07).doc

QA-QC TAPE (MG 1-26-07).doc (8...

Catherine,
It doesn't look like my 2nd email went to everyone. Here's the Attachment B file. Please excuse if this is a duplicate email for any of you.
Let us (the TAU) know when you'd like to discuss it.
Mary

Mary Goldade <mary4pilates@hotmail.com>
01/27/2007 04:22 AM

To: Clecours@mt.gov
cc: Roger Hoogerheide/R8/USEPA/US@EPA, Paul Peronard/EPR/R8/USEPA/US@EPA, FRANCES COSTANZI/EPR/R8/USEPA/US@EPA, Aubrey Miller/EPR/R8/USEPA/US@EPA, Wendy OBrien/EPR/R8/USEPA/US@EPA, Jim Luey/EPR/R8/USEPA/US@EPA, Mary Goldade/EPR/R8/USEPA/US@EPA
Subject: TAPE comments

Catherine,
Please find attached Attachment B for the TAPE. This file provides suggested additions/amendments to language provided in the TAPE...focusing on QA/QC issues.
Thanks,
Mary
(See attached file: QA-QC TAPE (MG 1-26-07).doc)

shall assess decontamination procedures and retrain the field sampling team(s) and/or administer corrective actions as necessary.

Field Duplicates – Field duplicates are collected as co-located samples from the same land use area as the parent sample. The duplicate is collected from the same number of subsamples as the parent sample, but the sample locations of the duplicate are randomly located within the same use area. These samples will be used to determine the variability of sample results in a given land use area. These samples are not used to determine precision in sampling techniques. Soil field duplicate samples will be collected at a rate of 1 per 20 (5 percent) of the non-QC field samples.

Send version w/ notes & Appendix direction

Roger? Did not send to TTEMI yet

Section X Modification Forms

Modifications to data or sample collection procedures typically used at other sites may be necessary due to the nature of the field activities, but may be compounded due to the complex issues surrounding asbestos sampling in general and for LA in particular. Any field modifications are documented in Troy Field Office (TFO) modification forms. Figure XX provides an example of the TFO modification form. The TFO modification form provides a standardized format for tracking procedural changes in data or sample collection and allows project managers to assess potential impacts on the quality of the data being collected. Before making any changes to the procedures documented in the TAPE, the recommended change must be approved by the project manager and QA representatives.

As seen in Figure XX, the TFO modification form contains the following information:

- the title of the field guidance document being modified
- a description of the process change
- the known or estimated impacts to data quality, including a list of potentially impacted sample IDs or addresses as appropriate
- the name of the individual requesting the modification
- the dates the modification was implemented (may be temporary or permanent)
- the technical reviewer approval signature and date of review
- the QA reviewer approval signature and date of review

The original hard copy TFO modification forms with signatures are controlled and maintained by the sample coordinator in Troy. However, electronic PDF versions are available at: XXX.

Section X Readiness Review, Initial Training

Readiness review and training will be held prior to commencement of field activities. To ensure sampling is carried out in a manner that is similar to Libby sample collection activities, CDM will hold a field activity training seminar during the week of April XXX.

Following the training seminar, but shortly prior to initiation of sampling activities (1-2 days), TTEMI will hold a readiness review meeting. All field team members, project managers, QA personnel and electronic data collection managers will attend. The team will walk through the sampling and data capture steps, to be sure everyone has the proper equipment and are knowledgeable about procedures to carry out.

Section X Audits of Field Activities

Field audits are conducted to evaluate field personnel in their day-to-day activities and ensure all processes and procedures are performed in accord with the applicable field guidance documents (or approved TFO modification forms). Field audits are performed according to the schedule established by the Project Manager or EPA QAM or other QA representatives. Depending upon project goals, field audits may be internal or external. Internal field audits are performed by members of the Troy project team who participate in the TAPE and are familiar with the Troy QA/QC program and the field activities being conducted. External audits are performed by an independent party that specialize in evaluating field programs and are selected by the Troy project team.

An external field audit is scheduled approximately 2-3 weeks following commencement of field activities. This will identify any errors or inconsistencies early, thus preventing future data collection from becoming compromised. All aspects of data and sample collection, as well as sample handling, custody, and shipping are evaluated. If any issues are identified, field personnel are notified and retrained as appropriate. Periodic follow-up field audits may be conducted to verify that any deficiencies noted during the earlier audits have been addressed and that no new issues have arisen.

Provide details of how audit reports will be produced, reviewed, distributed, and reposited.

Section X LABORATORY QUALITY ASSURANCE

Describe the organizational structure for when TTEMI will perform QC sample collection activities and when CDM is responsible. It is my understanding that TTEMI will only be collecting field QC samples (with the exception of lot blanks which CDM will also be responsible for).

Laboratory QA activities include all processes and procedures that have been designed to ensure that data generated by an analytical laboratory are of high quality, and that any problems in sample preparation or analysis that may occur in the laboratory are quickly identified and rectified. The following sections describe each of the components of the laboratory QA/QC program implemented at the Troy site.

Section X Laboratory Quality Control Samples

A variety of laboratory-based QA/QC analyses are performed to help establish the quality of data obtained by TEM, PCM and PLM, as discussed below.

randomly selected and submitted for analysis at a minimum frequency of 1 lot blank per 50 cassettes. The lot blanks will be analyzed for asbestos fibers by the same method as will be used for field sample analysis. The entire batch of cassettes will be rejected if any asbestos fiber is detected on the lot blanks. Only lots of filters with acceptable lot blank results are placed in the general supply area for use by project personnel.

Field blanks – The collection frequency for field blanks is 5% (1 in 20 field samples). One field blank, chosen at random, will be analyzed per week for each investigation. Field blanks are collected by opening the sample cassette to the ambient environment for 5 to 30 seconds then re-capping the sample cassette. The field blanks will be analyzed for asbestos fibers by the same method as will be used for field sample analysis. If asbestos fibers are observed on the analyzed field blank, all other field blanks collected during that week will be submitted for analysis to determine the potential impact on sample results. It is expected, based on historically analysis of the rate of asbestos detection of field blanks, asbestos structures will only be observed on field blanks on very rare occasions. If any asbestos structure is observed on a field blank,

Field Duplicates – Field duplicates are collected as co-located samples from the same area as the parent sample. The duplicate is collected from the same number of subsamples as the parent sample, but the sample locations of the duplicate are randomly located within the same area. These samples will be used to determine the variability of sample results in a given area. The target rate for dust field duplicate collection is 5% (1 in 20 investigative samples).

Section X Dust Sampling Equipment Calibration

Prior to sample collection each dust sampling pump is calibrated to a primary or secondary calibration standard as described in EPA SOP #2015 to the desired flow rate, usually 2 liters/minute.

Section X Soil QC Samples

The two types of QC samples collected in association with soil samples are equipment blanks and field duplicates. Analysis of field QC samples will occur using the same sampling, preparation and analytical techniques (e.g., PLM-VE with drying/splitting/grinding preparations).

Equipment Blanks – Soil samples are collected using non-disposable equipment. Field equipment blanks are collected to determine if decontamination procedures of field equipment used to collect asbestos sample are adequate to prevent cross-contamination of samples during sample collection. Equipment blanks are collected at frequency of once a week from a randomly selected field team. OK AS WRITTEN IN TAPE DRAFT.

If any asbestos structure is observed in an equipment blank, corresponding field samples will be identified and analytical results will be assessed a qualifier of "EB" to indicate the potential for asbestos contamination. Additionally, the TAPE project manager, QA manager or designate

of asbestos contamination as well. If asbestos is detected, corrective actions are implemented including wipe downs of equipment and work areas and an attempt to isolate the source. Corrective actions continue until follow up blank results are negative for asbestos.

TEM air samples are collected in the lab and analyzed by AHERA methodology for asbestos. If ANY asbestos is detected corrective action is taken. This includes a clean up of the area by HEPA vacuum and or wet wiping. An attempt to isolate the source should also take place to minimize the chance of repeat contamination.

Section X Libby2 Database Use and Management

All data collected under coordination of the TAPE shall be stored in the Libby2 Database. The Libby project database (Libby2) is a custom relational database that has been developed specifically for the Libby site. Due to the nature of asbestos analysis and other data requirements, the database has been developed iteratively, expanding in capabilities (and complexity) as project-specific needs have been refined. In addition to providing new functionality as needed, enhancements have been made iteratively to accommodate data user needs and to incorporate various automated QA/QC procedures to improve data integrity. A complete description of Libby2 and data management procedures for the Site are provided in Data Management procedures overseen by EPA Database Manager, Martin McComb.

Section X Analytical Verification and Consistency Reviews

In accord with the TEM Verification SOP (REF), a minimum of 10% of all TEM analyses is required. The basic steps in this process include the selection of TEM analyses that will undergo a data consistency review and verification, performing a consistency review of the original laboratory TEM bench sheets to verify that TEM analysts working on the Troy project are performing analyses in accord with project-specific recording rules, and verifying the correct transfer of results from the bench sheets into the Libby2 Database. Similar verification and consistency reviews shall be performed for all analyses used in clean up decisions (e.g., PLM). PCM testing is planned for OSHA worker exposure compliance and is required to adhere to OSHA regulations for data adequacy.

Section X Field-Based QC Samples

Section X Dust Samples

The three types of QC samples collected in association with dust samples are lot blanks and field blanks. Analysis of field QC samples will occur using the same sampling, preparation, and analytical techniques as the field investigative samples.

Lot blanks – Before samples are collected, cassette lot blanks from each filter lot will be

Laboratory QC Samples for TEM

The QC requirements for TEM analyses at the Libby site are patterned after the requirements set forth by NVLAP. The types of laboratory QC samples for TEM include the following:

- Laboratory blanks
- Re-analysis (same grid openings, same analyst)
- Re-analysis (same grid openings, different analyst)
- Interlab (same grid openings, different laboratory)
- Repreparation (new grid and grid openings)

Laboratory Modification LB-000029 summarizes the project-specific TEM QC frequency rate, type, and acceptance criteria for all participating laboratories.

Laboratory QC Samples for PCM

Laboratory-based QC samples for PCM are based on the requirements specified by AIHA. This includes daily checks of microscope resolution, daily analysis of one or more reference slides (slides analyzed repeatedly over time to determine each analyst's precision), and re-analysis of at least 10% (a minimum of 1 per day) of all field samples.

Laboratory QC Samples for PLM

Laboratory-based QC for PLM is based on the requirements specified by NIST/NVLAP. This includes daily evaluation of various blanks to check for contamination. Overall QC analysis is at a rate of at least 10%, including inter- and intra-analyst reanalyses, inter-lab and blank analysis.

Section X Training

Initial Mentoring

In order to ensure that new laboratories are properly trained to perform reliable analyses at the Troy site, a program was established in which laboratories that are experienced with the analysis of LA provide training and mentoring to the new laboratories prior to their involvement with the analysis of Libby field samples. All new laboratories are required to participate in the mentorship/training program. The training program includes a rigorous 2-3 day period of on-site training provided by senior personnel from those laboratories that are highly experienced with the Libby project. The tutorial process includes a review of morphological, optical, chemical,

and electron diffraction characteristics of LA, as well as training on the project-specific analytical methodology, documentation, and administrative procedures required for the Libby site.

Site-Specific Reference Materials

Because LA is not a common form of asbestos, the US Geological Survey (USGS) developed three site-specific reference materials using LA collected at the Libby mine site. Upon entry into the program, each laboratory was provided samples of these LA reference materials. Each laboratory analyzed multiple structures present in these samples by TEM in order to become familiar with the physical and chemical appearance of LA, and to establish a reference library of LA EDS spectra. These laboratory-specific and instrument-specific reference spectra serve to guide the classification of particles observed in field samples.

Weekly Technical Discussions

To ensure that all laboratories are aware of any technical or procedural issues that may arise, a weekly teleconference is held between EPA, their contractors, and each of the participating laboratories. Other experts (e.g., USGS) are invited to participate when needed. These calls cover all aspects of the analytical process, including sample flow, information processing, technical issues, analytical method procedures and development, documentation issues, project-specific laboratory modifications, and pertinent asbestos publications.

Section X Data Recording

Standardized data entry spreadsheets (electronic data deliverables, or EDDs) have been developed specifically for the Libby project to ensure consistency between laboratories in the presentation and submittal of analytical data. These EDDs shall be used in Troy as well. In general, a unique EDD has been developed for each type of analytical method (TEM, PCM, PLM).

Each EDD contains a variety of built-in QC functions that improve the accuracy of data entry and help maintain data integrity. For example, data entry forms utilize drop-down menus whenever possible to standardize data inputs and prevent transcription errors. In addition, many data input cells are coded to highlight omissions, apparent inconsistencies, or unexpected values so that data entry personnel can check and correct any errors before submittal of the EDD. These spreadsheets also perform automatic computations of sensitivity, dilution factors, and

concentration, thus reducing the likelihood of analyst calculation errors. The EDD is uploaded directly uploaded into the project database, avoiding any additional data entry requirements.

Section X Laboratory Modification Forms

When changes or revisions are needed to improve methods or procedures used for analysis of LA, these changes are documented using the laboratory modification process. Figure XX provides an example of the laboratory modification form. The laboratory modification form provides a standardized format for tracking procedural changes in sample analysis and allows project managers to assess potential impacts on the quality of the data being collected. As seen, the laboratory modification form contains the following information:

- the title of the analytical method being modified
- a description of the process change
- the known or estimated impacts to data quality, including a list of potentially impacted sample IDs as appropriate
- the name of the individual requesting the modification
- the dates the modification was implemented (may be temporary or permanent)
- the technical reviewer approval signature and date of review
- the QA reviewer approval signature and date of review

The laboratory modification forms are controlled and maintained by EPA's laboratory contractor at Libby (CDM).

Section X Laboratory Audits

Each Libby laboratory is required to participate in an on-site laboratory audit carried out by the EPA Superfund Analytical Services Branch (ASB). These audits are performed by EPA personnel (and their contractors) external to and independent of the Libby team members.

Section X Laboratory Monitoring

Laboratory monitoring for the occurrence of contamination is a continual process that covers every aspect of the laboratory process.

Blank checks are performed routinely during PLM analysis by dipping scalpels, probes, tweezers etc. in dispersion staining oils and analyzing for asbestos. Lab blanks serve as a check for contamination of tools and equipment. Negative field blanks are actually a confirmation of lack